Refine Search

Search Results -

Terms	Documents
L28 and account$ near object	2

Database:
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EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search:

Refine Search

Recall Text | Clear | Interrupt

Search History

DATE: Saturday, June 10, 2006 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L29	L28 and account$ near object	2	L29
L28	L26 and data near packets	209	L28
L27	L26 data near packets	96564	L27
L26	L21 and charge near (tariff or fee or price)	1271	L26
L25	L24 and charge near (tariff or fee or price)	0	L25
L24	L23 and rout$ near messages	1275	L24
L23	L22 and data near packets	11823	L23
L22	l13 and L21	25730	L22
L21	communications near (network or internet or www)	223681	L21
L20	l1 and l13	5	L20
L19	370/389	9434	L19
L18	707/103r	1771	L18
L17	707.clas.	35180	L17

L16	705/1	5851	L16
L15	705/34	748	L15
L14	705.clas.	42362	L14
L13	370.clas.	98014	L13
L12	370/class	0	L12
L11	370/400	4268	L11
L10	370/238	1640	L10
L9	370/351	3955	L9
L8	L7 and (tariff or fee or price or charge)	1	L8
L7	l1 and account$ with object	9	L7
L6	('6996722')[URPN]	0	L6
DB=USPT; PLUR=YES; OP=OR			
L5	(6580906 | 5787179 | 5937067 | 5710815 | 5584023 | 6351538 | 6055314 | 5544161 | 5148485 | 6222924 | 5467134 | 5483598 | 5652868 | 5301233)! [PN]	14	L5
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L4	('6996722')[ABPN1,NRPN,PN,TBAN,WKU]	2	L4
L3	L1 and (network or internet or www or web) near resources	13	L3
L2	L1 and usage near (network or internet or www or web) near resources	1	L2
L1	(federated near data near network or "federated data network" or federated adj data adj network or federated with data with network)	61	L1

END OF SEARCH HISTORY

Freeform Search

Database: US Pre-Grant Publication Full-Text Database
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Term:

Display: 10 **Documents in Display Format:** - **Starting with Number** 1

Generate: ○ **Hit List** ◉ **Hit Count** ○ **Side by Side** ○ **Image**

Search Clear Interrupt

Search History

DATE: Saturday, June 10, 2006 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L6	l1 and communications near network	344	L6
L5	('6055508')[URPN]	12	L5
DB=USPT; PLUR=YES; OP=OR			
L4	(5963914 | 5715164 | 5778066 | 5799083)![PN]	4	L4
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L3	('6055508')[ABPN1,NRPN,PN,TBAN,WKU]	2	L3
L2	"internet accounting"	48	L2
L1	(internet or network or www) near accounting	835	L1

END OF SEARCH HISTORY

L2: Entry 28 of 48 File: USPT Apr 25, 2000

US-PAT-NO: 6055508
DOCUMENT-IDENTIFIER: US 6055508 A

TITLE: Method for secure accounting and auditing on a communications network

DATE-ISSUED: April 25, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Naor; Moni	Tel-Aviv			IL
Pinkas; Binyamin	Tel-Aviv			IL

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
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APPL-NO: 09/092069 [PALM]
DATE FILED: June 5, 1998

INT-CL-ISSUED: [07] G06 F 15/00, H04 L 9/00

US-CL-ISSUED: 705/11; 705/404, 705/405, 713/168
US-CL-CURRENT: 705/11; 705/404, 705/405, 713/168

FIELD-OF-CLASSIFICATION-SEARCH: 705/11, 705/404, 705/405, 713/168
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5715164	February 1998	Liechti et al.	705/410
☐	5778066	July 1998	Shah et al.	705/62
☐	5799083	August 1998	Brothers et al.	380/239
☐	5963914	October 1999	Skinner et al.	705/11

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Carter et al., "Universal Classes of Hash Functions", Journal of Computer and System Sciences, 18:143-155, (1979).

ART-UNIT: 277

PRIMARY-EXAMINER: Swann; Tod R.

ASSISTANT-EXAMINER: Myhre; James W.

ATTY-AGENT-FIRM: Browdy and Neimark

ABSTRACT:

A method for secure accounting and auditing of a communications network operates in an environment in which many servers serve an even larger number of clients (e.g. the web), and are required to meter the interaction between servers and clients (e.g. counting the number of clients that were served by a server). The method (metering process) is very efficient and does not require extensive usage of any new communication channels. The metering is secure against fraud attempts by servers which inflate the number of their clients and against clients that attempt to disrupt the metering process. Several secure and efficient constructions of this method are based on efficient cryptographic techniques, are also very accurate, and preserver the privacy of the clients.

21 Claims, 3 Drawing figures

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L2: Entry 28 of 48 File: USPT Apr 25, 2000

DOCUMENT-IDENTIFIER: US 6055508 A
TITLE: Method for secure accounting and auditing on a communications network

Brief Summary Text (16):
The Internet is based on packet switching, i.e. there is no dedicated path between two parties that are communicating through the Internet, but rather each packet of information is routed separately. The Internet is essentially a network of networks and packets are typically routed through several different networks. These properties complicate pricing and accounting mechanisms for Internet usage, and indeed the most common pricing method is to charge a fixed price which is independent of the actual number of packets which are transferred. Pricing theory based analysis indicates that pricing Internet services according to the actual usage (at least at times of network congestion) is superior in terms of network efficiency. Usage based pricing has a disadvantage of incurring accounting and billing costs. It is impractical to create detailed account reports (similar to telephone accounts) due to the huge number of packets. Some are suggesting measuring usage using sampling or only at times of congestion (however, even producing reports for a sample of say, 1/1000 of the packets creates inconceivably large reports). MacKie-Mason and Varian also expect breakthroughs in the area of in-line distributed accounting that will lower the costs of Internet accounting.

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L6: Entry 304 of 344 File: USPT Feb 11, 1997

US-PAT-NO: 5602907
DOCUMENT-IDENTIFIER: US 5602907 A

TITLE: Method and system for accounting communication charges

DATE-ISSUED: February 11, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hata; Emi	Kawasaki			JP
Nemoto; Kenji	Kawasaki			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Fujitsu Limited	Kanagawa			JP	03

APPL-NO: 08/284002 [PALM]
DATE FILED: August 1, 1994

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	6-005457	January 21, 1994

INT-CL-ISSUED: [06] H04 M 15/00

US-CL-ISSUED: 379/114; 379/112, 379/113, 379/115, 379/118, 379/130, 379/133, 379/136, 379/140
US-CL-CURRENT: 379/114.22; 379/114.01, 379/115.01, 379/118, 379/130, 379/133, 379/136, 379/140

FIELD-OF-CLASSIFICATION-SEARCH: 379/111-115, 379/118, 379/125-127, 379/130, 379/133, 379/140, 379/136
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4788719	November 1988	Gupta	379/114
☐	4791640	December 1988	Sand	379/114

☐	4935956	June 1990	Hellwarth	379/112
☐	5146491	September 1992	Silver	379/114
☐	5218632	June 1993	Cool	379/112
☐	5222125	June 1993	Creswell	379/112
☐	5263084	November 1993	Chaput et al.	379/142
☐	5303297	April 1994	Hillis	379/114
☐	5381467	January 1985	Rosinski	379/114

ART-UNIT: 267

PRIMARY-EXAMINER: Chin; Wellington

ASSISTANT-EXAMINER: Shankar; Vijay

ABSTRACT:

During an execution of communications between an originating terminal and a receiving terminal which are connected through an ISDN, when an item of information saying that a rate at which charges for the communications are shared between these terminals is changed to a given rate is transmitted from either the originating terminal or the receiving terminal to the ISDN, the communication charges after transmitting this item of information are imposed on the originating terminal and/or the receiving terminal in accordance with this rate presented. If an agreement of the other terminal is not obtained on this occasion, the charges are imposed on the originating terminal and/or the receiving terminal in accordance with an original accounting rate or the rate presented from the other terminal.

14 Claims, 33 Drawing figures

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L6: Entry 304 of 344 File: USPT Feb 11, 1997

DOCUMENT-IDENTIFIER: US 5602907 A
TITLE: Method and system for accounting communication charges

Brief Summary Text (3):
The present invention relates to an accounting method for sharing charges for services of a communications network with an originating user and/or a receiving user. The communications network to which the present invention is applied is a communications network in which the service charges for the use thereof are imposed and includes any kinds of communications networks such as an analog telephone network-and a data communications network like a packet communications network and an ISDN (Integrated Services Digital Network).

Brief Summary Text (5):
In recent years, there have been developed data communications services via a data communications network such as a packet communications network and an ISDN. In such data communications services, as in the same way with the communications services via an analog telephone network, there is adopted a "connection-oriented" communications system that a data path is preset before data communications take place. FIG. 32 is a time arrow diagram showing a call setting sequence in this conventional communications system. Note that the network is illustrated in the form of one point in FIG. 32. As a matter of fact, however, this network is constructed of a plurality of switches and trunk lines for relaying these switches in all directions.

Brief Summary Text (7):
According to the accounting system of the charges (talk charges) for services of the communications network in the above-mentioned "connection-oriented" communications system, normally, the communications network service charges (talk charges) are calculated based on a quantity of receiving cells on the receiving user, and the charges are imposed on the originating user. Further, in the analog telephone network, there is spread a "collect call service" in which the communications network service charges (talk charges) are imposed on the receiving user with an agreement between the originating and receiving users when setting the call. Moreover, an accounting system wherein the charges are imposed on both of the originating user and the receiving user in accordance with a fixed rate is proposed (see Japanese Patent Laid-Open Publication No.61-146059).

Brief Summary Text (8):
By the way, for instance, if the originating and receiving users offer information exhibiting high added values to each other, it is rational that the (originating and receiving) users themselves flexibly determine a share of burden of the communications network service charges in accordance with a high-and-low balance of the added values of the information offered by each other.

Brief Summary Text (9):
In the conventional accounting system, however, the originating or receiving user is able to only determine which user is burdened with the charges but can not arbitrarily set a sharing rate thereof. Accordingly, the users do nothing but accept the burden of irrational communications network service charges. Note that there is caused such troublesomeness that the communications network service

charges have to be cleared off between the users in an ex-post-facto manner. This is a first problem inherent in the conventional accounting system.

Brief Summary Text (10):
Next, in the conventional accounting system, the accounting destination can be determined only when setting the call. Hence, even when there arises a necessity for changing accounting specification (an accounting destination and/or an accounting share) in the middle of the communications, the accounting specification have to be accepted as they are, or the call has to be reset on another occasion after temporarily releasing the call (disconnecting the line). This a second problem inherent in the conventional accounting system. Note that the second problem is conspicuous especially when executing a "call waiting function". More specifically, the call waiting function provided presently as a line switching added service of OSI protocol layer-3 is a function that an in-communications user holds an in-communications call and simultaneously reply to a new call-in when the user receives a call-in notice and, further, make switchable both of the in-communications call and an in-hold call. Then, according to the conventional accounting system, even when a call of the user whom the communication service charges are imposed on (normally, the originating user but the receiving user) when using the collect call services is held due to the call waiting function, the user has to accept the burden of the communications network service charges during the hold due to some convenience of the partner user. This is irrational. Even in this case, the accounting specification can be changed if the call is reset by releasing the call (disconnecting the line). If done so, however, there arises a contradiction that a significance of introducing the call waiting services disappears.

Brief Summary Text (13):
The accounting method and system according to the present invention has been devised under such circumstances. According to one aspect of the present invention, there is provided an accounting system of communication charges for communications between a first terminal and a second terminal connected to each other via a communications network. According to the accounting system, when changing information requesting that an accounting rate between the respective terminals with respect to the communication charges is changed to a given rate is transmitted from one terminal to the communications network in the middle of communications, the communication charges after transmitting the changing information are imposed on one terminal and/or the other terminal in accordance with the given rate.

Brief Summary Text (14):
The terminal includes a telephone, a facsimile, a computer, etc. Particularly when the communications network is a digital communications network, the terminal may be a digital telephone capable of transmitting even video information. Note that one of the first and second terminals is an originating terminal, while the other terminal is a receiving terminal. The originating terminal is a terminal making a call setting request, while the receiving terminal is a partner terminal receiving the call setting request.

Brief Summary Text (15):
The communication charges include line service charges, talk charges, added value service charges, etc.. Further, in connection with a method of calculating the talk charges, if a system for connecting the respective terminals is a constant connection system, the charges may be calculated based on a communications time. If the connection system of the respective terminals involves packet switching, a frame relay or a cell relay, the charges may be calculated based on the number of packets, frames or cells. The request for setting the accounting rate of the communication charges may be accepted when setting the call. That is, the rate of charges may be determined even at the start of communications. If not so, the charges are automatically imposed on the originating terminal and/or the receiving terminal in accordance with a predetermined rate when setting the call. All the

communication charges may be imposed on the originating terminal or on the receiving terminal as a variation in terms of the accounting rate. The communication charges may also be imposed on both of the originating terminal and the receiving terminal at a fixed rate. The changing information requesting the change of the accounting rate may be transmitted from either the originating terminal or the receiving terminal but may also be transmitted from only the originating terminal or the receiving terminal. Further, in the communications service added with the call waiting function, the request for holding the call can be conceived as a piece of information requesting the change of the accounting rate. In this case, all the charges can be always imposed on the terminal making the request for holding the call. When the changing information requesting the change of the accounting rate is transmitted from one terminal to the communications network, the charges may be imposed at all times in accordance with a rate contained in the changing information. Alternatively, after notifying the other terminal of the rate, and only when the other terminal agrees to this rate, the charges may also be imposed thereon in accordance with the rate. In the latter case, if the other terminal does not agree to the relevant rate, and when the other terminal transmits an item of information requesting a change to a different rate, the charges may be imposed based on the rate contained in the information transmitted by the other terminal. Note that this different rate is termed a modified rate.

Detailed Description Text (4):
FIG. 2 shows an outline of the accounting system in accordance with this embodiment carried out in the communications system having the above schematic construction. To be specific, a communication charge for the relevant call is imposed on the originating terminal T1 and/or receiving terminal T2 in accordance with a rate determined when setting the call by some means. In the middle of the communications by this call (step ST1), one terminal described above transmits, to the communications network, a piece of changing information requesting that an accounting rate of the communication charge between the respective terminals is changed to a given rate (step ST2). Then, the communications network imposes the communication charge after the above information has been transmitted upon one terminal and/or the other terminal in accordance with the given rate (step ST3).

Detailed Description Text (75):
If the accounting rate is not set (when the "ACCOUNTING DESIRED RATE" window 16 can not be opened), a call is set as it is between the originating terminal T1 and the receiving terminal T2. The talk between the two users takes place in accordance with a normal operation (step S13). In this case, charges for services of the communications network are all imposed on the originating user. Note that an interruption of processing of FIGS. 24 and 25 can be done for a duration of even the normal operation.

Detailed Description Text (78):
Namely, if the receiving user agrees to the sharing request, the receiving user inputs the function key "YES" 18 and raises the handset 14. Hereupon, the call is set between the originating terminal T1 and the receiving terminal T2, thus making the communications serviceable (step S07). The charges for services of the communications network in this instance are imposed at a rate desired by the originating user. Afterward, when the talk comes to an end (step S08), the accounting information is displayed on the display screens 13 of the originating terminal T1 and of the receiving terminal T2 as well (step S09). Then, this flow of procedures is finished.

Detailed Description Text (80):
Whereas if the receiving user talks in step S10, the receiving user inputs a self-desired accounting rate in the numeral input portion 19 of the "RECEIVED" window 16 and raises the handset 14 (step S11). Hereupon, the call is set between the originating terminal T1 and the receiving terminal T2, and the communications

become serviceable (step S07). The charges for services of the communications network in this instance are imposed at a rate desired by the receiving user. Note that 00% is set as an initial value in the numeral input portion 19 of this "RECEIVED" window 16. Accordingly, if the receiving user rejects the accounting share, the receiving user may raise the handset 14 without changing the setting of the numeral input portion 19 in step S11. The charges for services of the communications network in this case are all imposed on the originating user. When finishing the talk (step S08), the accounting information is displayed on the display screens of both of the originating and receiving terminals (step S09). Then, this procedure comes to an end.

Detailed Description Text (82):
Next, the procedures are made variable depending on whether or not this partner user agrees to the sharing request (step S18). Namely, if the partner user agrees to the sharing request, the partner user inputs the function key "YES" (step S19). Then, the next procedure proceeds to step S07. Charges for subsequent talks by using the communications network are to be imposed at a rate presented.

Detailed Description Text (83):
Contrastingly, if the partner user does not agree to the sharing request in step S18, the procedure is made variable depending on whether or not this partner user requests the change of the accounting rate (step S20). That is, if the partner user requests the change in the accounting rate, this partner user inputs a self-desired accounting rate (step S21)o Then, the next procedure proceeds to step S07. The charges for subsequent talks by using the communications network are to be imposed at the rate presented by the partner user.

Detailed Description Text (84):
Whereas if the partner user does not request the change in the accounting rate in step S20, this partner user does not input the function key 18 at all. Then, this interrupt processing of FIG. 24 comes to an end, and, thereafter, the procedure returns to the original processing position. In this case, the charges for services of the communications network are imposed the same as the accounting theretofore.

Detailed Description Text (88):
In any case, next, the talk between the originating terminal T1 and the receiving terminal T2 is held, and a call corresponding to a call setting message given from other user is set (step S26), The charges for services of the communications network during this hold are imposed on the receiving user when passing through step S25 but imposed the same as before when passing through step S28.

Detailed Description Text (90):
When the receiving user depresses the hook, the next procedure proceeds to step S07 of FIG. 23, and the talk becomes effective. The charges for services of the communication network in after are imposed the same as the one that is used before the holding.

CLAIMS:

1. An accounting method of communication charges for communications between a plurality of terminals connected to each other via a communications network, the accounting method comprising the steps of:

transmitting a first information indicating that an accounting sharing rate between respective terminals with respect to the communication charges is changed from a first sharing rate corresponding to an accounting sharing rate used for accounting the communication charges between the respective terminals prior to said transmitting step, to a second arbitrary sharing rate, from one terminal of said respective terminals to said communications network, at arbitrary timing in the middle of the communication;

detecting the transmission of the first information; and

imposing the communication charges for a communication after detecting the transmission of the first information, on at least one of said one terminal and another terminal of said respective terminals in accordance with the second sharing rate.

2. An accounting method according to claim 1, further comprising the steps of:

transmitting the first information from said communications network to said another terminal; and

imposing the communication charges after the first information has been transmitted on at least one of said one terminal and said another terminal in accordance with the second sharing rate only when a second information indicating an agreement on the second rate is transmitted from said another terminal to said communications network.

5. An accounting method of communication charges for communications between a plurality of terminals connected to each other via a communications network, the accounting method comprising the steps of:

detecting that information indicating a hold of a communication with a connection through said communications network maintained, is transmitted from one of said terminals to said communications network, in the middle of the communication; and

imposing all the communication charges after detecting the transmission of the information on said one of said terminals.

6. An accounting method according to claim 5, wherein said communications network holds the communications between a first terminal and a second terminal with a connection of the first terminal and the second terminal maintained when a third terminal makes a request for performing the communication with one of said first and second terminals during an execution of the communications between said first terminal and said second terminal, and, at the same time, said communications network connects said one of said first and second terminals to said third terminal and makes the communications between said connected terminals serviceable.

9. A communications system comprising:

a communications network; and

a terminal,

said terminal including:

(a) setting means for setting a sharing rate at which charges for communication with other terminal are shared; and

(b) first transmitting means for transmitting a first information about a charge sharing rate set by said setting means to said communications network at arbitrary timing in the middle of the communications, said charge sharing rate being arbitrary;

said communications network relaying the communication between said terminal and said other terminal, imposing the charges for the communication between said terminal and said other terminal on at least one of said terminal and said other terminal and, upon receiving said first information about the charge sharing rate from said terminal, imposing the charges for the communication on the basis of the

received charge sharing rate.

10. A communications system according to claim 9, wherein said communications network transmits, upon receiving the first information about the charge sharing rate from said terminal, the first information to said other terminal.

11. A communications system according to claim 10, wherein each said terminal includes:

displaying means for displaying, when the first information about the charge sharing rate transmitted from said communications network is received, the charge sharing rate;

inputting means for inputting a second information indicating whether there is an agreement on the charge sharing rate between said one and other terminals; and

second transmitting means for transmitting the second information inputted from said inputting means to said communications network, and

wherein said communications network imposes the communication charges on the basis of the charge sharing rate only when the second information transmitted from said terminal indicates an agreement on the charge sharing rate.

12. A communications system according to claim 11, wherein said communications network imposes, when said other terminal rejects an agreement on the charge sharing rate transmitted from said one terminal and when the charge sharing rate set by said other terminal is transmitted from said other terminal to the communications network, the charges on the basis of the charge sharing rate transmitted from said other terminal.

13. A terminal station, connected to a communications network and comprising:

(a) setting means for setting a sharing rate at which charges for communication of one terminal with another terminal are shared; and

(b) transmitting means for transmitting information about the charge sharing rate set by said setting means to said communications network at arbitrary timing in the middle of the communication;

said terminal station imposing charges for the communication on the basis of the charge sharing rate received by said communications network, on at least one of said one terminal and said another terminal, upon reception of said information about the charge sharing rate from said terminal station by the communications network, said charge sharing rate being arbitrary.

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L6: Entry 301 of 344 File: USPT Apr 21, 1998

US-PAT-NO: 5742668
DOCUMENT-IDENTIFIER: US 5742668 A
**** See image for Certificate of Correction ****

TITLE: Electronic massaging network

DATE-ISSUED: April 21, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Pepe; David Matthew	Middletown	NJ		
Blitzer; Lisa B.	Manalapan	NJ		
Brockman; James Joseph	Perrineville	NJ		
Cruz; William	Eatontown	NJ		
Hakim; Dwight Omar	Matawan	NJ		
Kramer; Michael	Bronx County	NY		
Petr; Dawn Diane	Basking Ridge	NJ		
Ramaroson; Josefa	Freehold	NJ		
Ramirez; Gerardo	Bridgewater	NJ		
Wang; Yang-Wei	Howell	NJ		
White; Robert G.	Morristown	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Bell Communications Research, Inc.	Morristown	NJ			02

APPL-NO: 08/466623 [PALM]
DATE FILED: June 6, 1995

PARENT-CASE:
RELATED CASE INFORMATION This case is a continuation application of U.S. patent application Ser. No. 08/309,336 filed on Sep. 19, 1994. The contents of that application are incorporated herein by reference.

INT-CL-ISSUED: [06] H04 M 11/00, H04 M 1/64

US-CL-ISSUED: 379/58; 379/67, 379/57
US-CL-CURRENT: 455/415; 379/88.22, 379/93.03, 379/93.23, 455/413

FIELD-OF-CLASSIFICATION-SEARCH: 379/58, 379/59, 379/60, 379/57, 379/93, 379/67, 370/58.1, 370/110.1
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL | Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5008926	April 1991	Misholi	379/89
☐	5168271	December 1992	Hoff	379/60 X
☐	5311576	May 1994	Brunson et al.	379/89
☐	5325419	June 1994	Connolly et al.	379/60
☐	5329579	July 1994	Brunson	379/88
☐	5351235	September 1994	Lahtinen	370/58.1
☐	5384831	January 1995	Cresswell	379/67
☐	5418835	May 1995	Frohman et al.	379/57
☐	5420911	May 1995	Dahlin et al.	379/59
☐	5452289	September 1995	Sharma et al.	370/32.1
☐	5479411	December 1995	Klein	370/110.1
☐	5604788	February 1997	Tett	379/58

ART-UNIT: 268

PRIMARY-EXAMINER: Bost; Dwayne

ASSISTANT-EXAMINER: Richardson; Scott

ATTY-AGENT-FIRM: Yeadon; Loria B. Giordano; Joseph

ABSTRACT:

A personal communications internetwork provides a personal communications internetwork providing a network subscriber with the ability to remotely control the receipt and delivery of wireless and wireline electronic text messages. The network operates as an interface between wireless and wireline networks. The subscriber's message receipt and delivery options are maintained in a database which the subscriber may access by wireless or wireline communications to update the options programmed in the database.

3 Claims, 32 Drawing figures

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L6: Entry 301 of 344 File: USPT Apr 21, 1998

DOCUMENT-IDENTIFIER: US 5742668 A
** See image for Certificate of Correction **
TITLE: Electronic massaging network

Brief Summary Text (5):
The messaging options described above are available to businesses of all sizes, as well as individual users, from a variety of service providers. Many offices have some or all of the messaging options described above. The office may have certain messaging equipment (referred to as "consumer premises equipment" or "CPE") connected to one or more wireline networks. That is, the office may have telephones, fax servers, and voice mail systems connected to phone lines, and computers having modems for e-mail connected to packet networks which are connected via phone lines. The mobile employee may have certain wireless messaging equipment, such as a pager, a cellular telephone, or a personal digital assistant ("PDA"), which is typically a notebook computer connected to a wireless communication network.

Detailed Description Text (25):
A mobile communications subscriber (for example an employee who works at the office described above and travels frequently) has various portable messaging equipment, such as a PDA 30, a cellular phone 32, and a pager 34. These are connected to wireless networks 39. These wireless messaging options may be provided by different service providers. That is, the cellular phone may be connected to a wireless network of a cellular phone service provider, the pager may be connected to a different wireless network maintained by a pager service provider, and the PDA may be connected to a third wireless communications network maintained by yet another service provider.

Detailed Description Text (115):
Communication between the PDA and PCI use, for example, an X.25 transport using the UDP IP protocol. A brief discussion of the PDA structure is provided. The PDA 30 is preferably a notebook or palm top computer having a wireless network interface. The PDA may be, for example a Hewlett Packard Omnibook 300 notebook computer running a PCI application. FIG. 11 illustrates an exemplary PDA. The PDA 30 has a central processing unit 295 connected to a bus B. The central processing unit ("CPU") 295 performs most of the computing and logic functions of the PDA 30. A memory 296 is connected to the bus B, which stores information to be provided to the CPU 295 or otherwise used by the PDA 30. An input/output device 297, such as a keyboard, is also connected to the bus B which allows a user to input data for storage in memory 296 or for use by CPU 295. A display 298 is connected to the bus B. The PDA 30 also has a wireless communication interface 299 for communication with a wireless communication network.

Detailed Description Text (192):
Billing operations is supported by an Automatic Message Accounting Network Function. The automatic network accounting measures, collects, formats and outputs network usage information to upstream billing and other operation application and service purposes. Preferably, automatic message accounting data is collected at various stages of service flows across network equipment and services.

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L6: Entry 286 of 344 File: USPT Oct 26, 1999

US-PAT-NO: 5974457
DOCUMENT-IDENTIFIER: US 5974457 A

TITLE: Intelligent realtime monitoring of data traffic

DATE-ISSUED: October 26, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Waclawsky; John G.	Frederick	MD		
Hershey; Paul C.	Manassas	VA		
Daugherty; Raymond F.	Mt. Airy	MD		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
International Business Machines Corporation	Armonk	NY			02

APPL-NO: 08/172701 [PALM]
DATE FILED: December 23, 1993

INT-CL-ISSUED: [06] G06 F 17/40

US-CL-ISSUED: 709/224; 706/917, 706/46
US-CL-CURRENT: 709/224; 706/46, 706/917

FIELD-OF-CLASSIFICATION-SEARCH: 364/550, 364/551.01, 364/579, 364/580, 364/489, 364/490, 364/514C, 364/514R, 371/27, 395/21, 395/51, 395/917
See application file for complete search history.

PRIOR-ART-DISCLOSED:

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	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4227245	October 1980	Edbland et al.	
☐	4458309	July 1984	Wilder, Jr.	
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☐	4521849	June 1985	Wilder, Jr.	
☐	4779194	October 1988	Jennings et al.	

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☐	4939724	July 1990	Ebersole	
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☐	5062055	October 1991	Chinnaswamy et al.	
☐	5067107	November 1991	Wade	
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☐	5077763	December 1991	Gagnoud et al.	
☐	5079760	January 1992	Nemirovsky et al.	
☐	5084871	January 1992	Carn et al.	
☐	5243543	September 1993	Notess	364/514
☐	5375070	December 1994	Hershey et al.	364/550

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
61-53855	March 1986	JP	

ART-UNIT: 244

PRIMARY-EXAMINER: Voeltz; Emanuel T.

ASSISTANT-EXAMINER: Choi; Kyle J.

ATTY-AGENT-FIRM: Hoel; John E. Flynn; John D.

ABSTRACT:

The invention features a system and method to enable real-time establishment and maintenance of a standard of operation for a data communications network. The standard is a data set which includes network activity which is historically categorized by traffic type and by activity. The process begins with monitoring the network media or some network component over some period of time. The monitoring information is used to build benchmark data sets. The benchmark data sets contain a standard of operation for the network, which are historically categorized by either traffic type or activity. This standard of operation is constantly built by the intelligent monitoring facilities. After some period of time which is referred to as the benchmark data set refresh interval, the benchmark that was created is employed in a fashion to allow a determination as to whether the data that is taken from the current monitoring activity indicates normal network behavior. If the current network operating characteristics are outside the bounds or normal behavior, then alerts and logs of information can be sent to the expert system. The

expert system can then effect some network control. In this manner, auto benchmarking is accomplished with self customization.

18 Claims, 24 Drawing figures

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L6: Entry 286 of 344 File: USPT Oct 26, 1999

DOCUMENT-IDENTIFIER: US 5974457 A
TITLE: Intelligent realtime monitoring of data traffic

Abstract Text (1):
The invention features a system and method to enable real-time establishment and maintenance of a standard of operation for a data communications network. The standard is a data set which includes network activity which is historically categorized by traffic type and by activity. The process begins with monitoring the network media or some network component over some period of time. The monitoring information is used to build benchmark data sets. The benchmark data sets contain a standard of operation for the network, which are historically categorized by either traffic type or activity. This standard of operation is constantly built by the intelligent monitoring facilities. After some period of time which is referred to as the benchmark data set refresh interval, the benchmark that was created is employed in a fashion to allow a determination as to whether the data that is taken from the current monitoring activity indicates normal network behavior. If the current network operating characteristics are outside the bounds or normal behavior, then alerts and logs of information can be sent to the expert system. The expert system can then effect some network control. In this manner, auto benchmarking is accomplished with self customization.

Brief Summary Text (6):
This invention is related to the copending U.S. patent application Ser. No. 08/024,542, now U.S. Pat. No. 5,365,514 filed May 1, 1993 by J. G. Waclawsky, et al., entitled "System and Method for Configuring an Event Driven Interface and Analyzing Its Output for Monitoring and Controlling a Data Communications Network," assigned to the IBM Corporation and incorporated herein by reference. The Waclawsky, et al. patent application describes an information collection architecture which allows the conversion of signals in a data communications network bit stream, to be fed back into a monitoring and controlling system to assess and to modify protocol activity for a variety of communications protocols. The protocols handled include Token Ring protocol, ETHERNET protocol, Fiber Distributed Data Interface (FDDI) protocol, System Network Architecture (SNA) protocols, TCP/IP protocols, and SONET protocol, among others.

Brief Summary Text (7):
An example of this is for a token ring performance architecture described in greater detail in copending U.S. patent application Ser. No. 08/024,575, now U.S. Pat. No. 5,375,070 filed Mar. 1, 1993 by P. C. Hershey, et al. entitled "Event Driven Interface for a System for Monitoring and Controlling a Data Communications Network," assigned to IBM Corporation and incorporated herein by reference. This reference describes an expert system driven implementation that constructs a control vector C(i) which is transmitted to a programmable performance vector generator which includes an Event Driven Interface (EDI). The control vector tells the EDI how to organize its logic trees based on the type of protocol being run on a network. The control vector will configure the EDI logic trees to perform digital filtering of binary bit sequences on the network which characterize the protocol, the performance, and from which problem determination information can be inferred. The expert system will specify a format for an event vector E(i) that will be generated by the Event Driven Interface within the Programmable Performance Vector

Generator (PPVG), that will provide the requested information characterizing the current condition of the network. The expert system then analyzes the information in the event vector and drives control functions which enable control signals to be issued to the network to modify network load, perform load balancing and load distribution, do problem determination, modify network routing, or to provide other customer services. The expert system can issue control vectors C(i) to collect additional information to perform problem determination and analysis to identify and analyze temporary failures and performance degradation on the network. The expert system can perform performance monitoring to identify when a performance factor of a network component exceeds a predefined threshold. The expert system can perform benchmark testing of an application running on the network with respect to its functions, reliability and performance objectives. The expert system can initiate performance tuning and optimization of the network to improve the efficiency of the network or other network components. The expert system can perform a workload analysis and prepare a report to identify both application and protocol-related workloads, i.e., how much network traffic is useful information and how much is protocol-related, where the noisiest nodes are in the network and the amount of incoming and outgoing traffic flow to the network. The expert system can provide network sizing information to guarantee a workable solution for a particular customer application, based upon forecast traffic patterns. The expert system can provide input information for load balancing, load distribution and network control. The principle of operation of the expert system and Programmable Performance Vector Generator combination is also applied, to additional communications protocols such as Ethernet protocol, FDDI protocol, SNA protocols, TCP/IP protocols or the SONET protocol.

Brief Summary Text (8):
The invention finds application within the Information Collection Architecture which is further described in the above referenced Waclawsky, et al. patent application. The Information Collection Architecture extracts information characterizing all data communications network environments, especially those that are high speed and/or complex network environments. The Information Collection Architecture is an enabler that provides a unique physical layer based window into both physical and logical network activity. It can significantly improve the functions, and services and management of any data communications network. It is independent of communications protocols, standards, and physical media. The Information Collection Architecture invention is physically connected to an existing data communications network to monitor the high speed messages which are transferred over the network. The Information Collection Architecture includes a feedback connection which can be used to provide control signals back to the data communications network to modify the behavior of the network in response to monitoring data messages on the network. The Information Collection Architecture performs the functions of real-time identification of events which occur on the network and prepares summaries of correlated event behavior from the network. The Information Collection Architecture provides correlated data and does not go through any data decompression or reconstruction process. This differs from prior techniques of data compression and sampling. The Information Collection Architecture invention performs an examination of only the frequency of occurrence of selected bit patterns, unlike prior trace techniques which require processing for the examination of all network data to determine performance metrics. The Information Collection Architecture permits all traffic to be monitored so that no information goes unseen, which is distinct from prior filtering techniques which permit only a portion of the network traffic to reach the network monitor for analysis. The Information Collection Architecture includes an organized collection of hybrid data reduction vectors and their associated services. These services include performance monitoring, performance tuning and optimization, benchmarking, problem determination, workload analysis and reporting, network sizing, load balancing, load distribution, network control, network accounting and network management functions. These services are provided for a large variety of data communications networks.

Brief Summary Text (9):
It would be useful to provide a means for establishing benchmarks for the behavior of data communications networks so that valid criteria can be made available to the expert system of the Information Collection Architecture to enable the monitoring and controlling of the data communications network based upon relevant standards of behavior for the network.

Brief Summary Text (11):
It is an object of this invention to provide a technique for realtime monitoring of data communication networks.

Brief Summary Text (12):
It is still another object of the invention to provide an improved technique for the display of the results of realtime monitoring of a data communication network.

Brief Summary Text (14):
These and other objects, features and advantages are accomplished by the invention. The invention uses the Event Driven Interface described in the above cited Hershey, et al. patent application to deliver event vectors to the realtime intelligent monitoring system for monitoring the behavior of a data communications network to which it is coupled. The intelligent realtime monitoring system removes the need for process and storage at the data collection point. An event vector is accumulated at the data collection point and is transmitted over communications link to the intelligent realtime monitoring system where it is processed and displayed for analysis and network control. The resulting realtime monitoring invention enables the expert system to respond in realtime to deviations in the behavior of the data communications network from norms established by benchmark data sets. It also enables the system administrator to perform realtime monitoring and reacting in response to events which are displayed representing events occurring on a data communications network.

Detailed Description Text (2):
The invention is a method and system to enable realtime establishment and maintenance of a standard of operation for a data communications network. The standard is a data set which includes network activity which is historically categorized by traffic type and by activity.

Detailed Description Text (3):
FIGS. 1A and 1B describe the overall functional organization of the invention, FIG. 1A concentrates on the automated benchmarking with a self-customization feature and FIG. 1B focuses on the Intelligent Realtime Monitor feature. In FIG. 1A it is seen that the Event Driven Interface of the information collection architecture monitor 100 which is connected to the communications network being monitored, accepts event vectors which are transferred to the buffer array 140. Reference to Table 1 will illustrate example event vectors such as those which are generated by the Event Driven Interface described in the copending U.S. patent application Ser. No. 08/024,575, now U.S. Pat. No. 5,375,070 filed Mar. 1, 1993, which is cited above. The event vectors shown in Table 1 characterized batch traffic which starts and stops using the size and the frame rates and queuing status using the maximum frames per rotation (MFR) column. It can be seen in Table 1 that at line A, the number of frames is 682 and the maximum frame size is 103 bytes whereas at line B which is many minutes later in time, shows the number of frames being over 6000 and the maximum frame size being over 1000 bytes. Line B is near the middle of a burst of batch traffic that has been detected in the network. This is just one of many examples of the kind of information which is provided by the event vectors which are input to the buffer array 140. The buffer array 140 then outputs information derived from the event vectors to the accumulator storage 230 in the customized benchmark manager 195. The information from the event vectors is also output from the buffer array 140 to the expert system analysis module 160. The output from the

buffer array 140 is also applied to the Intelligent Realtime Monitor 199 shown in FIG. 1B.

Detailed Description Text (17):
FIG. 2 illustrates building an example benchmark data set structure, in accordance with the invention. The benchmark data set structure (BDS) 110 shown in FIG. 2 is an example which covers a duration I2 of one week, from midnight Sunday morning until the following midnight Sunday morning. The benchmark data set 110 includes consecutive one hour sample segments which are referred to as the benchmark interval information, which are taken over the interval I3, which in this example is one hour in duration. During each one hour interval, data has been collected from the event vectors generated by the Event Driven Interface in the data communications network. The data from the event vectors is characterized as A1, A2, A3 . . . in FIG. 2. An example of the type of information which can be accumulated during the one hour interval, is A1 can be the percent utilization which can be characterized as the maximum percent, minimum percent and average percent utilization which has been observed during the one hour interval Tuesday at 9:00 a.m. This information is collected in realtime by the Event Driven Interface and output as an event vector E(i) which is supplied by the monitor 100 shown in FIG. 2. As the information for the one hour segment is accumulated, it can fill a buffer 230 which is set up for the accumulation of information to be placed in the benchmark data set 110 by the customizing benchmark manager shown as 195 in FIG. 8 and FIGS. 1A and 1B. Other categories of information can include priority values observed for messages on the network and this is characterized in FIG. 2. Still other categories can be, for example, the number of bytes of information observed for particular applications having packets communicated on the network during the hour interval, and this would be accumulated in another category such as A17. Information which is accumulated in realtime will be incorporated into the appropriate benchmark data set that is also being buffered for future use. The benchmark data set in this example would have its component data accumulated for consecutive one hour benchmark collection intervals for an entire week I2. The completed buffered information in the benchmark data set for a week can then be set aside until a future time I1 at which it will be invoked as the set of benchmark standards for use as benchmark 120 in FIGS. 1A and 1B.

Detailed Description Text (19):
FIG. 2 shows how the monitor 100 can be applied in this example to take 30 second samplings of duration I5 of event vectors E(i) from the Event Driven Interface which is monitoring the data communications network in realtime. Each consecutive 60 second sampling interval I4 can be stored as is shown in FIG. 2 so that a total of 60 consecutive one minute sampling intervals are stored and the monitoring will progress as is shown in FIG. 2 for a duration of one hour.

Detailed Description Text (22):
In this example of the invention, the first BDS 120 can represent normal data network operations, the second BDS 120' can represent other BDS categories which can include batch traffic, interactive traffic, voice traffic, video traffic, accounting information, packet sizes, etc. In accordance with the invention, as the realtime event vectors E(i) are applied from the Event Driven Interface to the register 140 in FIG. 3, they are consecutively compared with the corresponding time interval segment 210 for BDS 120 in the first criteria module 150. From this comparison an inference can be drawn as to whether the data communications network is operating within the limits characterized by the segment 210 in the BDS 120 or whether it is outside those limits. The expert system 160 will perform this analysis and will issue an alert 180 which can result in network control 170 issuing control signals to the network to modify its operating parameters where necessary, in order to maintain a desired network throughput. Alternately, if the expert system 160, using the first criteria module 150, determines that the character of the traffic currently on the network is qualitatively different from the kind of traffic characterized by the BDS 120, then the expert system 160, in

accordance with the invention, can apply a different criteria module, such as the module 150'. For example, if the expert system 160, in analyzing the event vectors in 140, determines that instead of having a normal mixture of traffic on the network for the current one hour segment, there is instead a large volume of low priority traffic, then an inference can be drawn that the network is communicating batch mode traffic. Then in accordance with the invention, the expert system 160 can switch to the second BDS (BDS2) 120' and use the second criteria module 150', which in this example, characterize batch mode traffic. Then by using the second BDS 120' and the second criteria module 150', the system can measure whether the network is exceeding the operating limits established by the benchmark collection interval 210' for the second BDS2 120'.

Detailed Description Text (24):
In this manner, great flexibility is provided in the application of benchmark information to the monitoring analysis and network control of a data communications network which has been previously characterized by the accumulation of benchmark data from past event vectors generated by the Event Driven Interfaces in the data communications network.

CLAIMS:

1. In a system for intelligent real time monitoring of a data communications network which communicates using a serial stream of binary bits having characteristic patterns, a method for outputting monitoring and controlling signals which are customized by classes of traffic on the network, comprising:

inputting one or more event vectors from an Event Driven Interface coupled to a data communications network;

storing a first criteria of rules in said system for a first class of traffic in said network with a standard for said first class of traffic in said network;

storing in said system a first benchmark data set as said standard for said first class of traffic, said first benchmark data set being derived from previously monitored events of said first class of traffic in said network;

accessing said first criteria of rules and comparing information derived from said inputted event vectors with said standard for said first class of traffic, using said first criteria of rules;

outputting an inference signal in response said comparison to manage and control said first class of traffic on said network;

displaying a graphical representation of the behavior of the first class traffic using the inference signal for said first class of traffic.

11. A system for intelligent real-time monitoring using an event driven interface for analyzing the output of a data communications network which communicates using a serial stream of binary bits having characteristic patterns, comprising:

an event vector register coupled to the event driven interface, for receiving event vectors that characterize the behavior of the data communications network, each event vector descriptive of one or more classes of traffic occurring on the data communications network;

an expert system, having an input coupled to said event vector register, for receiving information from said event vectors, said expert system having one or more criteria modules, each criteria module associated with a class of traffic and a standard for said associated class of traffic, each criteria module having rules for characterizing the traffic on the network by comparing information represented

by the event vectors with a standard of behavior associated with the class of traffic associated with the criteria module;

said expert system outputting one or more inference signals, each inference signal associated with a class of traffic on the network; and

an intelligent real-time monitor that outputs signals to said data communications network in response to said inference signals to mange and control said classes of traffic in said data communications network and displaying a specific graphical representation of each inference signal based upon the associated class of traffic.

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End of Result Set

Generate Collection Print

L3: Entry 13 of 13 File: USPT Feb 7, 2006

US-PAT-NO: 6996722
DOCUMENT-IDENTIFIER: US 6996722 B1

TITLE: Data communications

DATE-ISSUED: February 7, 2006

INVENTOR-INFORMATION:

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APPL-NO: 09/555839 [PALM]
DATE FILED: December 15, 1998

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
EP	97310358	December 19, 1997
GB	9726934	December 19, 1997
EP	98304429	June 4, 1998
GB	9812060	June 4, 1998

PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE
PCT/GB98/03755	December 15, 1998	WO99/33224	Jul 1, 1999	Jun 6, 2000

INT-CL-ISSUED:

TYPE	IPC	DATE	IPC-OLD
IPCP	H04L9/32	20060101	H04L009/32
IPCS	H04L9/00	20060101	H04L009/00
IPCS	H04N7/167	20060101	H04N007/167

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPS	H04 L 9/00	20060101
CIPP	H04 L 9/32	20060101
CIPS	H04 N 7/167	20060101

US-CL-ISSUED: 713/192; 713/170, 713/171, 713/172, 713/173, 713/174, 380/239, 380/262
US-CL-CURRENT: 713/192; 380/239, 380/262, 713/170, 713/171, 713/172, 713/173, 713/174

FIELD-OF-CLASSIFICATION-SEARCH: 713/192, 713/170, 713/171, 713/172, 713/173, 713/174, 380/262, 380/239
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL | Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
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☐	5483598	January 1996	Kaufman et al.	
☐	5544161	August 1996	Bigham et al.	370/397
☐	5584023	December 1996	Hsu	
☐	5652868	July 1997	Williams	
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Bottura, Charging and Tariffing Functions and Capabilities for Mans' Proceedings of the Network Operations and Management Symposium (NOM, Memphis, Apr. 6-9, 1992, vol. 1, Jan. 1, 1992, pp. 208-218. cited by other
Coffey et al, Non-Repudiation with Mandatory Proof of Receipt: Computer Communications Review, vol. 26, No. 1, Jan. 1, 1996, pp. 6-17, XP000580016. cited by other

ART-UNIT: 2137

PRIMARY-EXAMINER: Smithers; Matthew

ASSISTANT-EXAMINER: Fields; Courtney

ATTY-AGENT-FIRM: Nixon & Vanderhye P.C.

ABSTRACT:

In a data communications system a remote data source outputs data as a series of application data units (ADUs). Each ADU is individually encrypted with a different key. The keys are transmitted (for example using Internet multicasting) via a communications network to one or more customer terminals. At the terminals a sequence of keys is generated for use in decrypting the ADUs. A record is kept of the keys generated, and this record may subsequently be used to generate a receipt for the data received by the customer. The keys may be generated, and the record stored within a secure module such as a smartcard.

36 Claims, 9 Drawing figures

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L3: Entry 2 of 13 File: PGPB Dec 29, 2005

PGPUB-DOCUMENT-NUMBER: 20050286488
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050286488 A1

TITLE: Communications network

PUBLICATION-DATE: December 29, 2005

INVENTOR-INFORMATION:

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British Telecommunications public limited company	London		GB	03

APPL-NO: 11/216349 [PALM]
DATE FILED: September 1, 2005

RELATED-US-APPL-DATA:
Application 11/216349 is a division-of US application 09/674717, filed November 6, 2000, PENDING
Application 09/674717 is a a-371-of-international WO application PCT/GB99/01765, filed June 4, 1999, UNKNOWN

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
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EP	98309609.0	1998EP-98309609.0	November 24, 1998
GB	9825723.1	1998GB-9825723.1	November 24, 1998
GB	9902052.1	1999GB-9902052.1	January 29, 1999
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INT-CL-PUBLISHED: [07] H04 L 12/28

US-CL-PUBLISHED: 370/351
US-CL-CURRENT: 370/351

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

In a communications network, which may be a federated network such as the Internet,

a tariff is distributed via the network to customer terminals. At each terminal a charge for use of the network is calculated by using the tariff. Different tariffs may be communicated for different services and a respective tariff may be varied depending upon the operational condition of the service. Different tariffs may be calculated for different customers and the tariffs may be varied in dependence upon the loading of network resources and different tariffs may have different volatilities. Part of the traffic from a user to the network may be sampled and the status of the user may be amended when a discrepancy is detected between the sampled parameters and the contracted parameters in the users contract.

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L7: Entry 5 of 9 File: USPT Feb 16, 1999

DOCUMENT-IDENTIFIER: US 5873083 A
TITLE: Method and apparatus for extending a relational database management system using a federated coordinator

Detailed Description Text (12):
The federated coordinator 206 comprises a session management/plan generation module 236 which handles all aspects of primary sessions between clients 220 and the host. The session plan/generation module 236 also accepts requests from clients 220, and transforms them into execution plans which are executed by the RDBMS 210 and the object servers 212, 214, and 216, performs database administration, establishes sessions with the client 220 (including maintaining accounting information and termination), and interprets client SQL or CLI requests and transforms them into execution plans.

Detailed Description Text (16):
Internal messaging communications are provided through internal messaging data paths between the federated coordinator 206, the virtual network 208, and the RDBMS 210, object server 212, and auxiliary object server 214. Since large object data instances are not transmitted via these paths, they also need not offer high bandwidth communications.

Detailed Description Text (62):
If the client command was a select command, object data associated with a MOL is obtained from the object server 212, and provided to the requesting client 220 or to a receiver client 258. First, the requested data is obtained 410 using the answer set from the RDBMS 210, and if the client requests actual object data 412, that data is sent 444 to the selected client via the virtual network 218. FIG. 4g presents a flow chart illustrating the process of obtaining 410 an answer set responsive to the select command, associating the resulting data with a MOL 410. First, a query plan is formulated 434. The query plan is an optimized set of commands which will be distributed to the RDBMS 210 and the object server 212 to obtain the desired data. FIG. 4h describes how the query plan is formulated. First, the M-SQL commands are parsed 512, resolved 514, checked to assure that access to the indicated database is authorized 516, and optimized 518. Next, the optimized plan is used to generate 520 the query plan. The process of parsing the query plan is described in FIG. 4i. First, the federated coordinator 206 obtains schema, network, and security information from the global data dictionary, which is stored in the RDBMS 210. This information provides the federated coordinator 206 with the building block information it needs to parse the M-SQL commands. Next, this information is used to transform 524 the M-SQL commands into a parse tree of objects, as described earlier. Items in the parse tree are then resolved 514. This is accomplished as shown in FIG. 4j. Eventually the query plan must be optimized according to a set of criteria established by the client 220 or other entities. To perform this optimization, costs for the various alternative plans must be obtained. These costs include both static and dynamic costs. Static costs are obtained from the GDD 526. Derived costs depend on the execution path chosen, and must be calculated 528 on the go. After the derived costs are calculated 528, they are bound to the parse tree nodes 530, and by iteration, these parse tree nodes are used to derive an optimized execution plan 532. This optimized plan is then used to generate the query plan, which comprises RDBMS 210 SQL commands and M-Step

execution plans for the object server 212. This process is illustrated in FIG. 4k.

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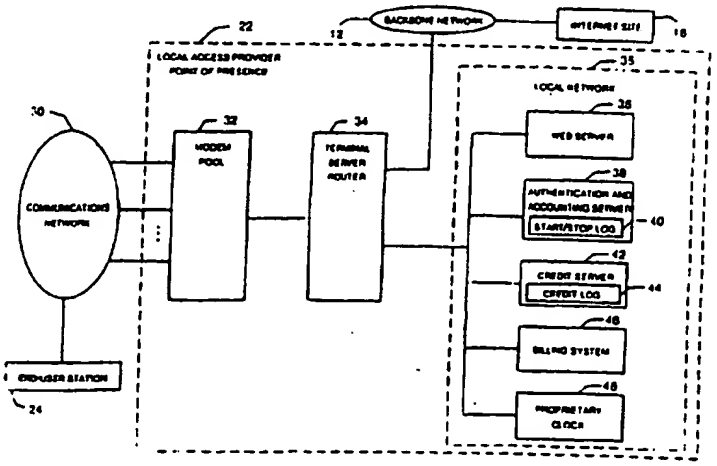
(57) Abstract

A method and system for providing an end-user with Internet access and allocating a cost associated with that access among the end-user and Internet sites (18) accessed by the end-user. A supervisory program module (58), such as a "JAVA" applet, resides on an originating station (24), such as a personal computer, operated by the end-user. The supervisory program module (58) may be activated by transmitting the supervisory program module to the originating station (24) from an Internet point of presence (22) operated by a local access provider. Alternatively, a trigger may be transmitted from the point of presence (22) to the originating station (24) to activate a supervisory program module (58) already residing on the originating station (24). The supervisory program module (58) monitors the duration of connections with specific Internet sites, and transmits messages to the point of presence (22) indicating the duration of these connections. The local access provider uses the information received in these messages to allocate a cost associated with the access, such as the cost associated with using a telephone network (30), among the end-user and Internet sites accessed by the end-user. Unique keys and time stamps are used as security measures. Unique keys are random identification numbers or codes generated by the point of presence (22). Time stamps are clock readings generated by the originating station, the point of presence, or other network components, are used as security measures.



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B. FIELDS SEARCHED

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

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P,X	WO 96 37848 A (WALKER ASSET MANAGEMENT LTD) 28 November 1996 see page 2, line 13 - page 8, line 20 see page 10, line 18 - page 11, line 30 see page 13, line 1 - line 36	1,2,23
P,X	EP 0 765 068 A (AT & T CORP) 26 March 1997 see column 1, line 55 - column 3, line 34 see column 5, line 58 - column 6, line 38	1,2,23

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[X] Further documents are listed in the continuation of box C

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Name and mailing address of the ISA	Authorized officer
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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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